

Contaminant and Population Levels of Fish-eating Birds of Lake Huron.

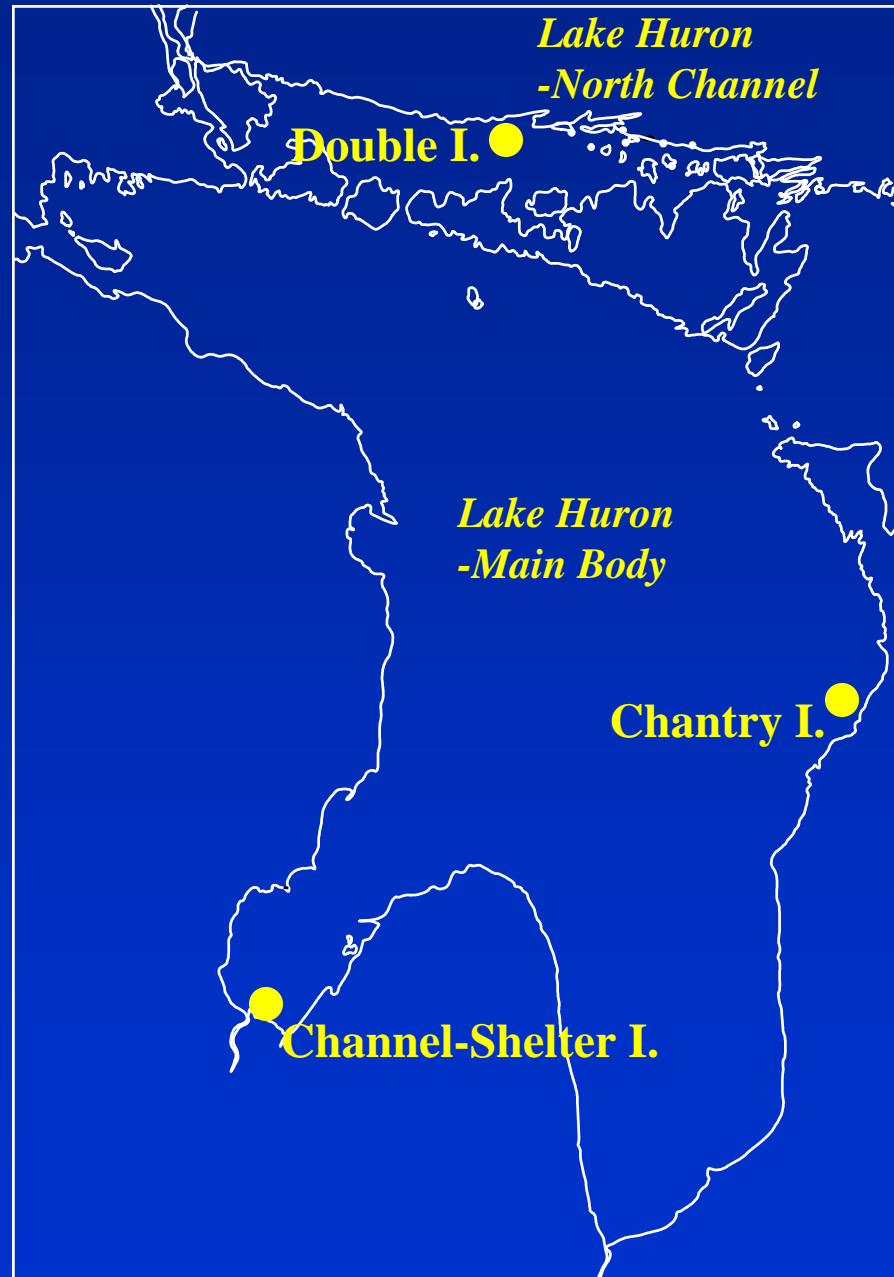
By:

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Pekarik¹, Joan McKearnen², Tania Havelka¹ and
Linda Wires²**

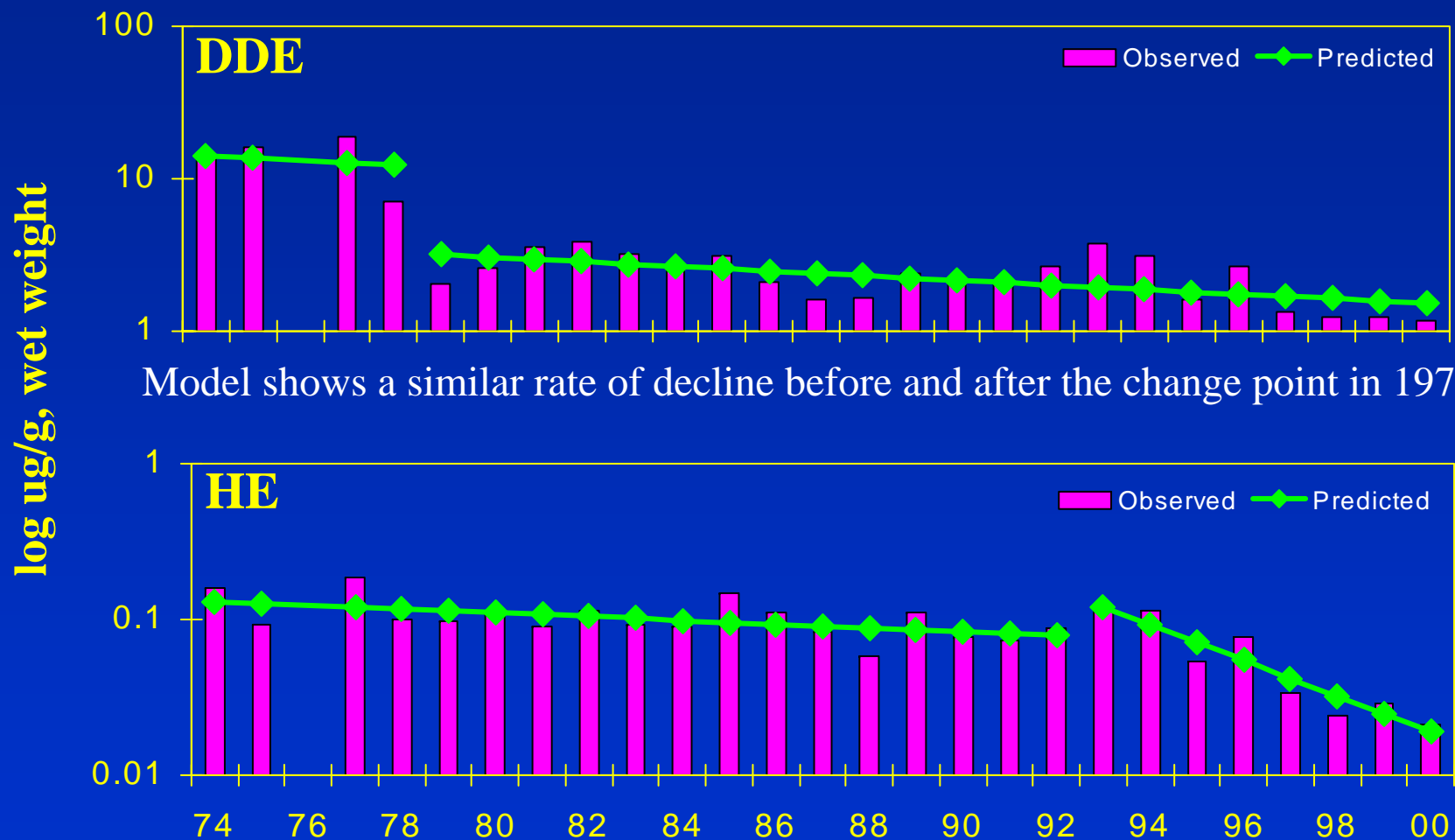
**1 - Canadian Wildlife Service, Environment Canada, 4905 Dufferin St.,
Downsview ON M3H 5T4**

**2 - University of Minnesota, Minnesota, Department of Fisheries and
Wildlife, 1980 Folwell Ave., St. Paul, Minnesota 55108**

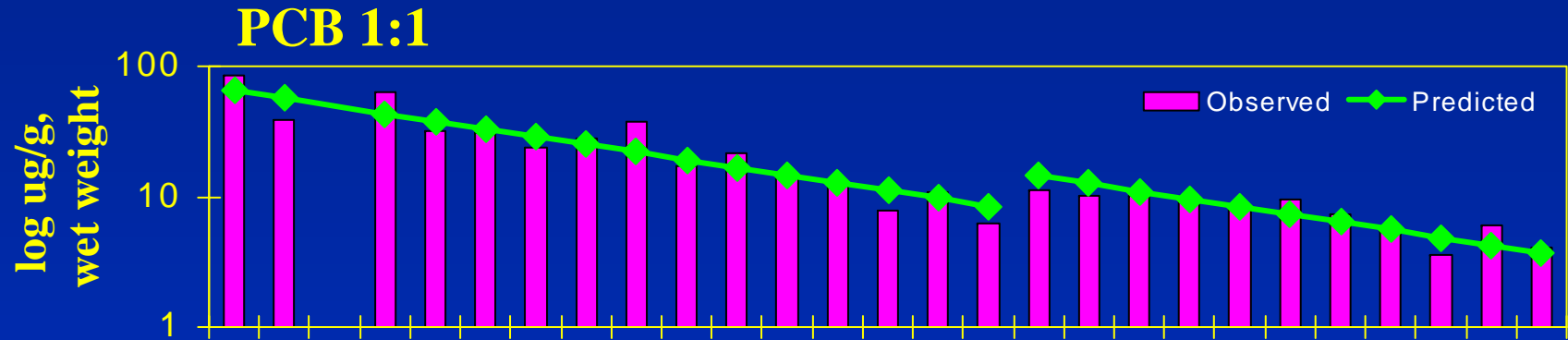
Location of the three Annual Monitoring Colonies on Lake Huron



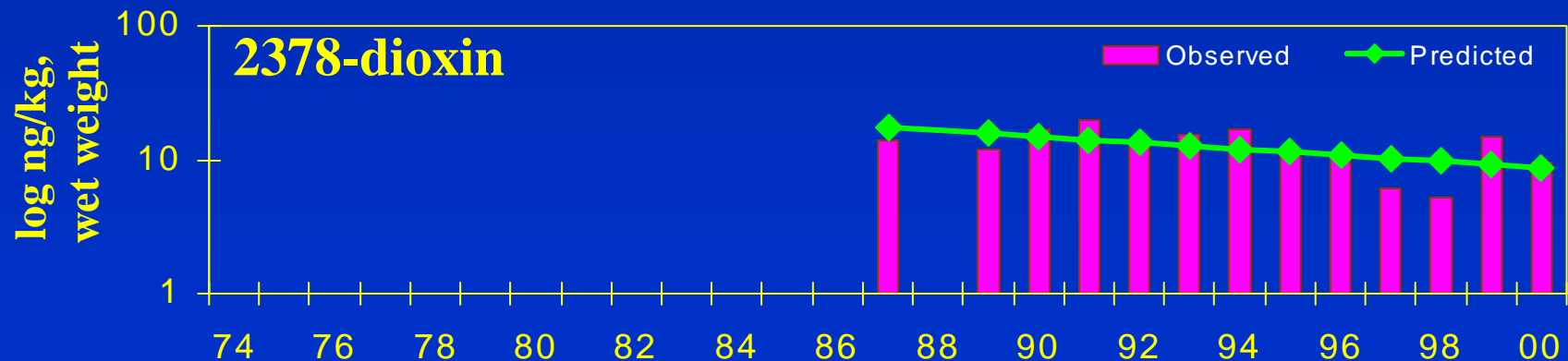
DDE and HE in Herring Gull eggs - Double I., Lake Huron, 1974-2000



PCB and Dioxin in Herring Gull eggs - Chantry I., Lake Huron, 1974-2000.



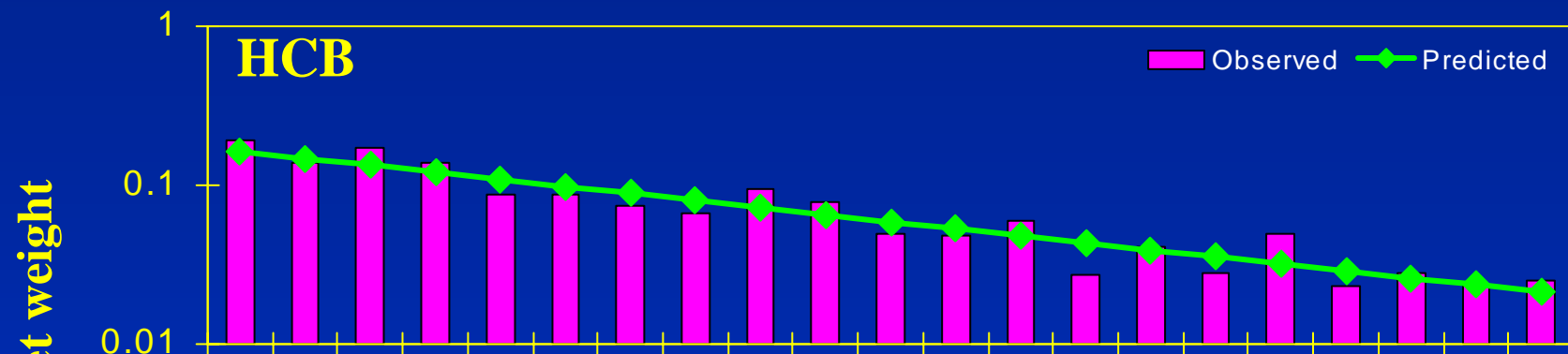
Model shows similar rate of decline before and after the change point in 1990.



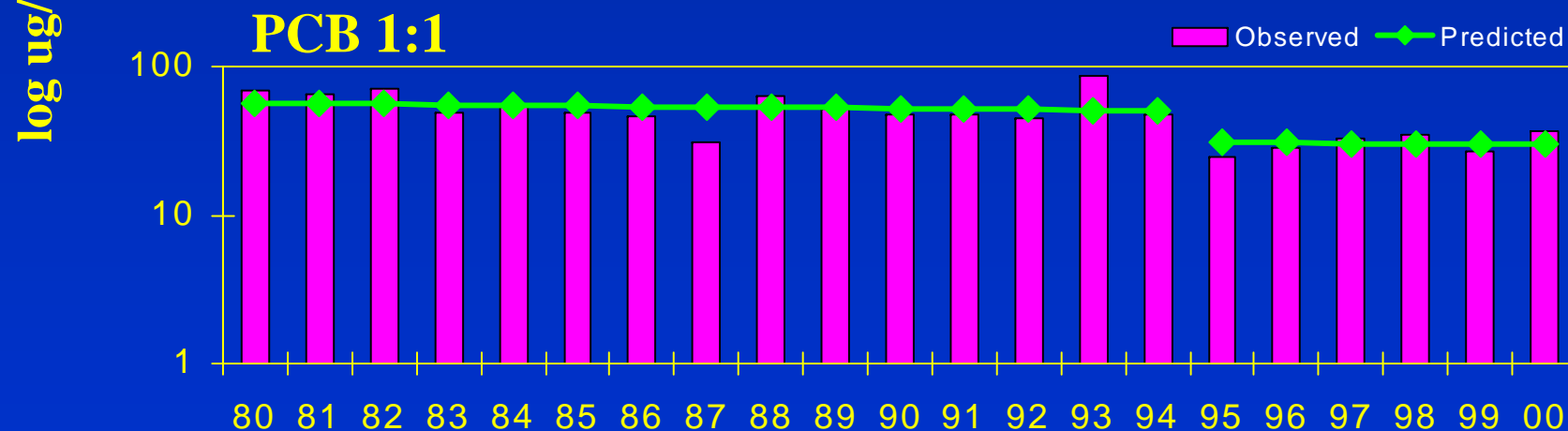
Model shows no significant trend throughout the study with no change point.

Year

HCB and PCB in Herring Gull eggs - Channel-Shelter I., Lake Huron, 1980-2000.



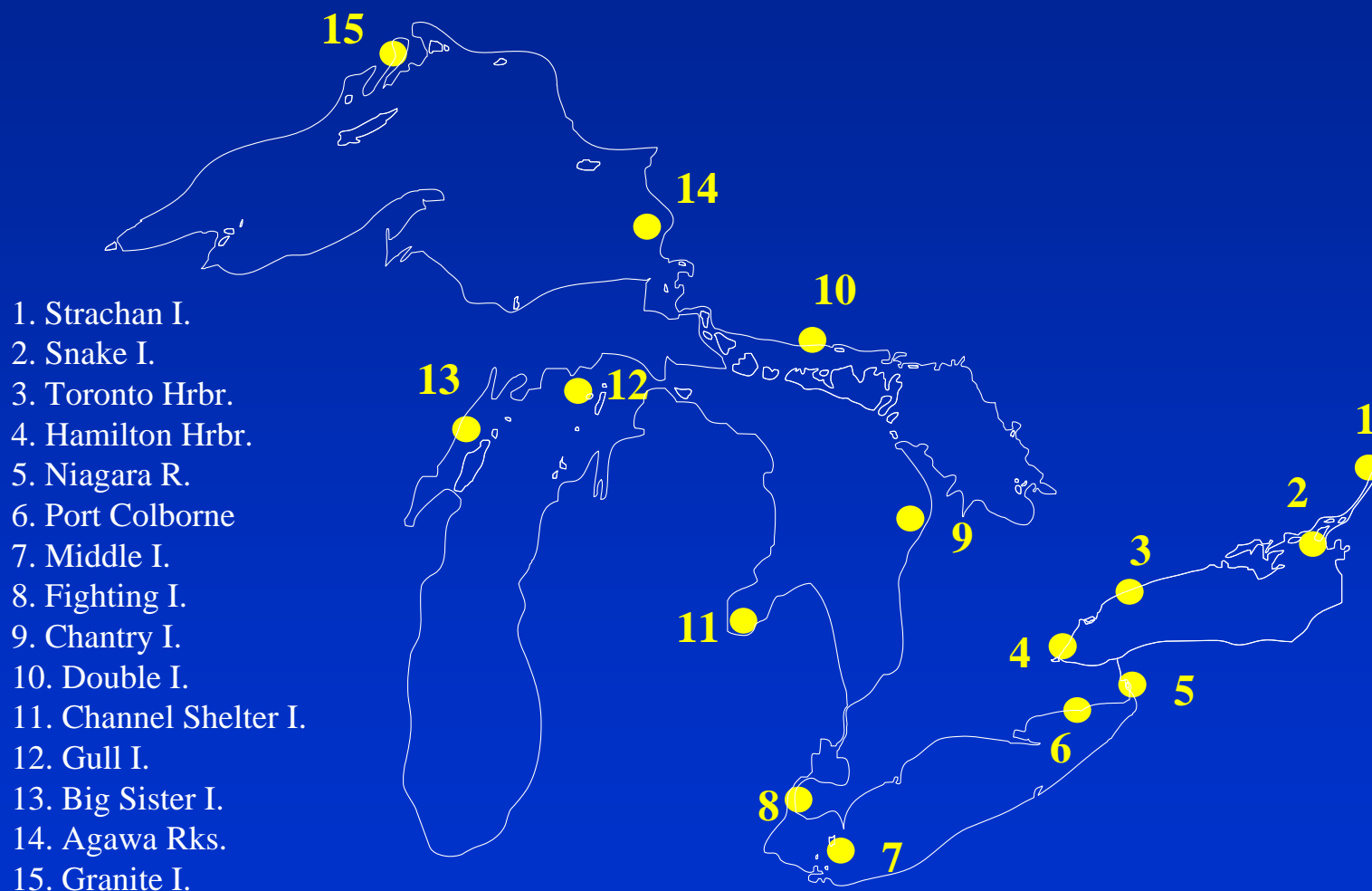
Model shows a significant rate of decline throughout the study with no change point.



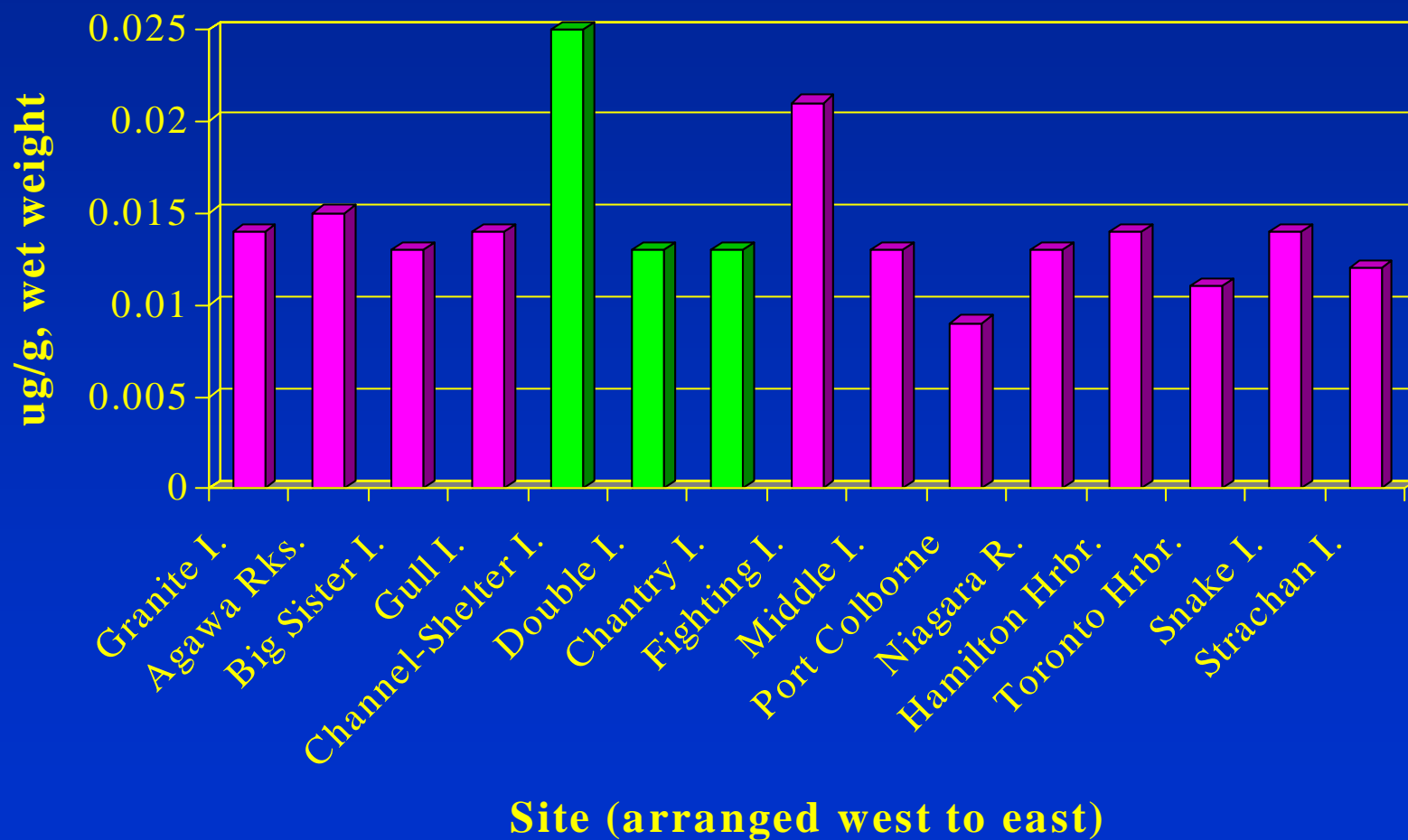
Model shows no significant trend throughout the study. There was a change point in 1995.

Year

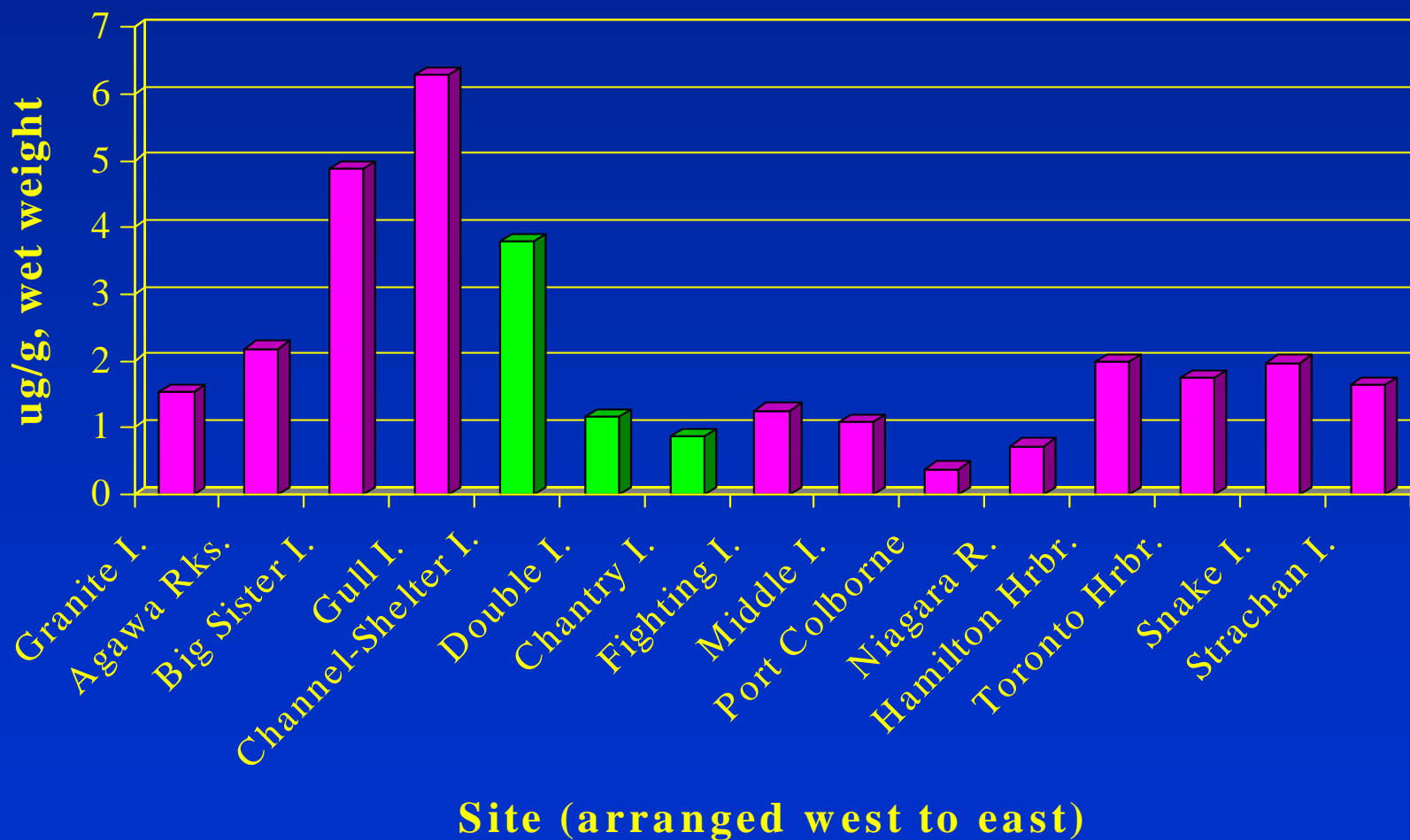
Location of the 15 Herring Gull Annually Monitored Colonies



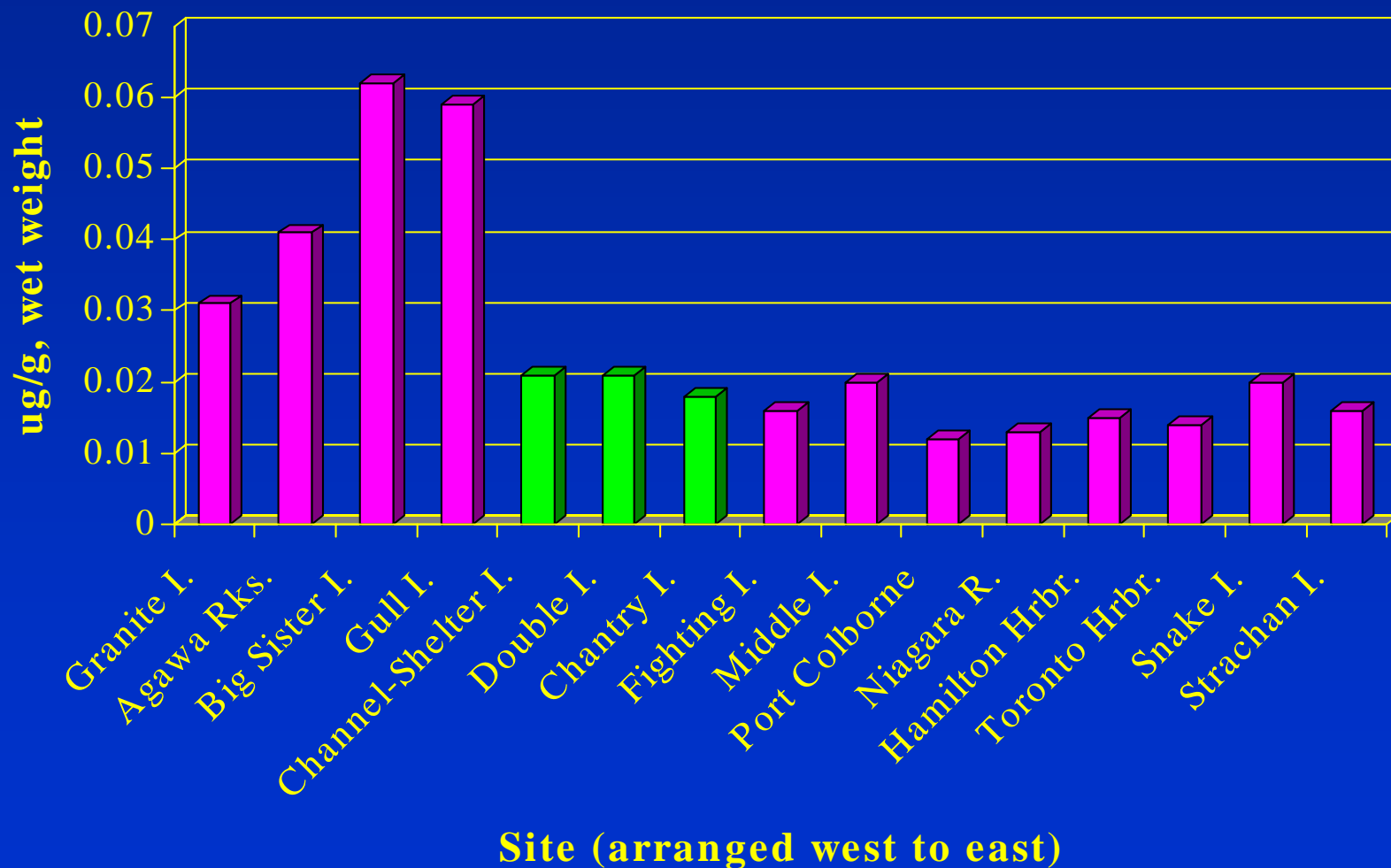
HCB in Herring Gull eggs - Annually Monitored Colonies, 2000



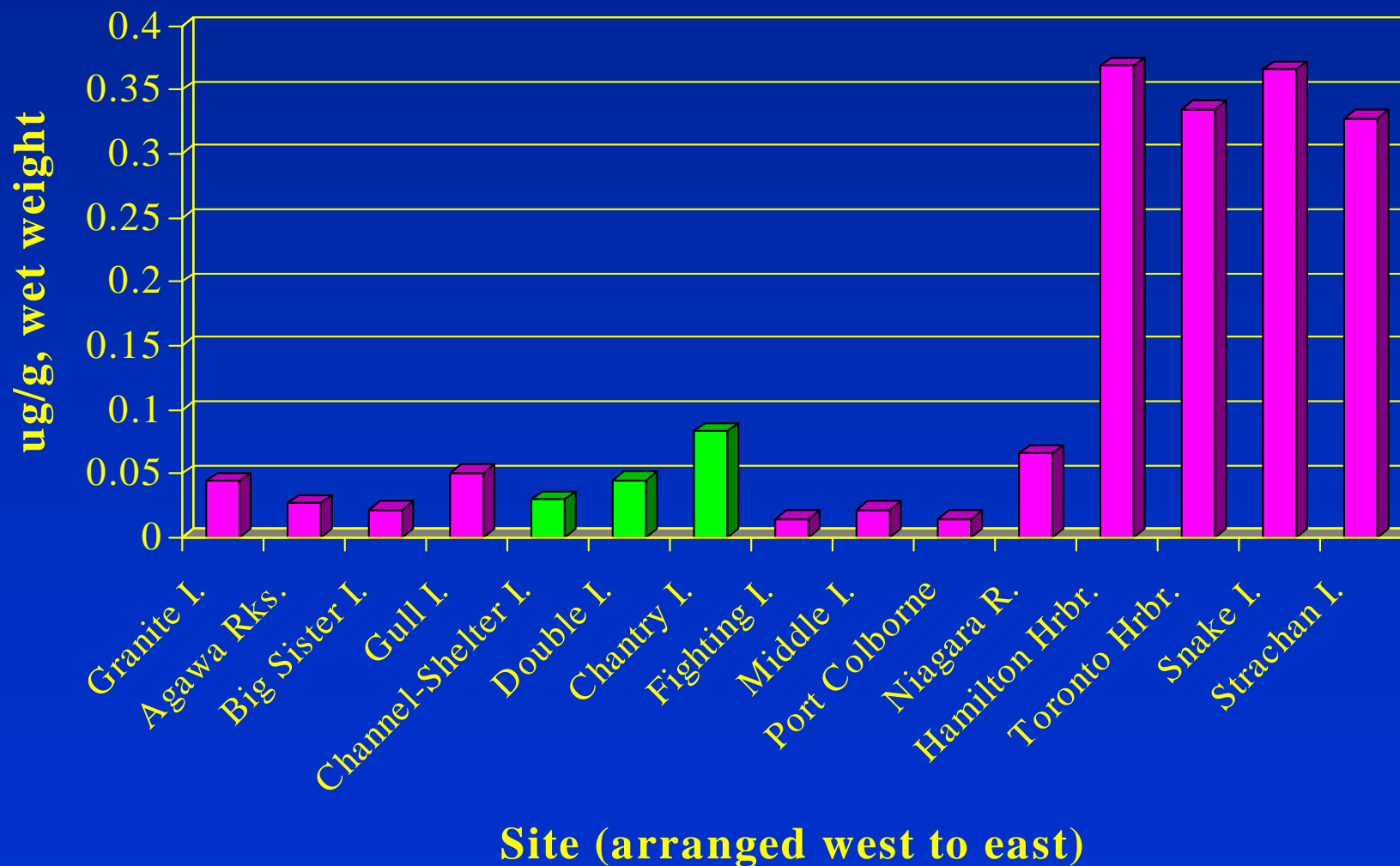
DDE in Herring Gull eggs - Annually Monitored Colonies, 2000



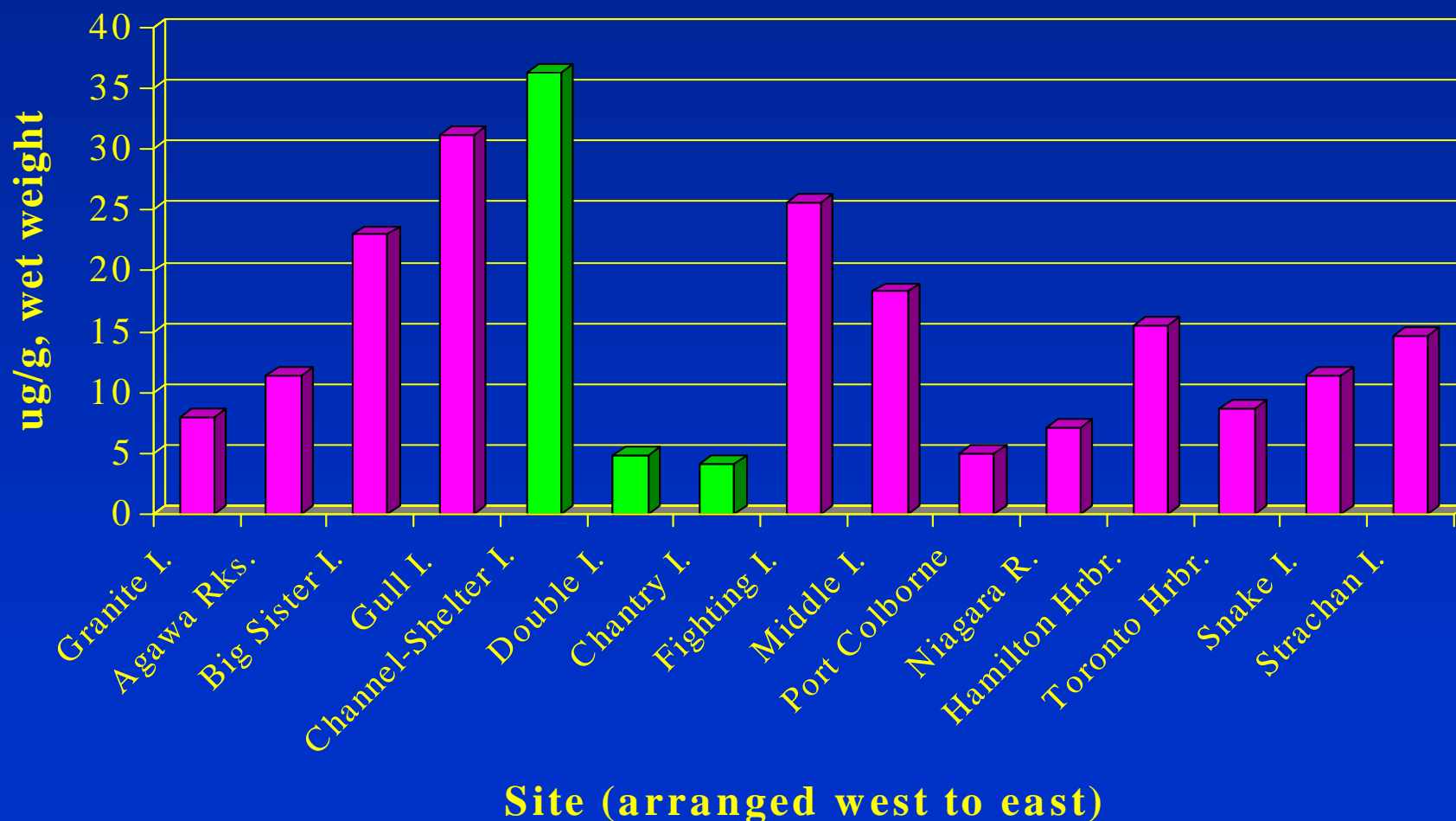
Heptachlor epoxide in Herring Gull eggs - Annually Monitored Colonies, 2000



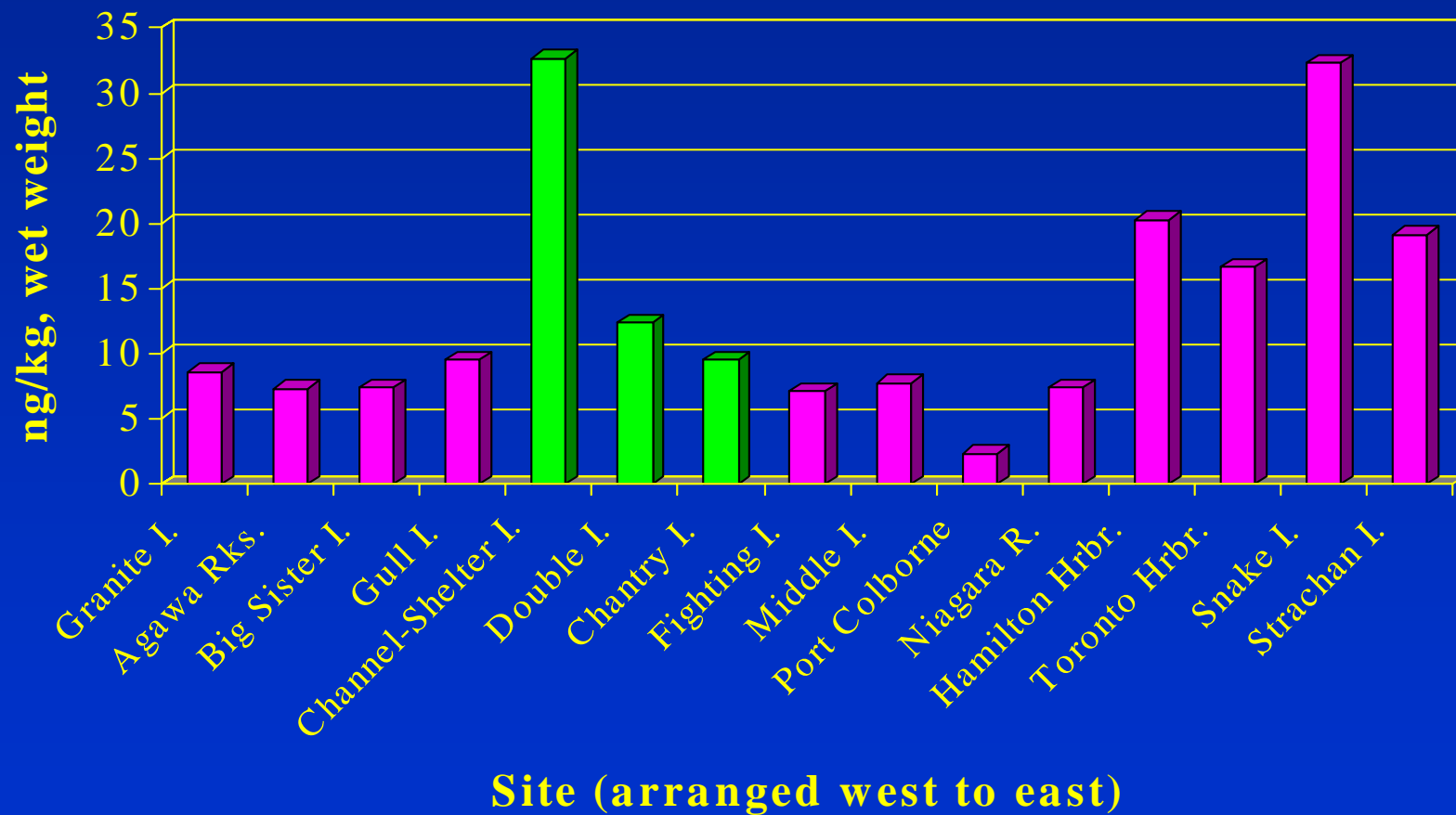
Mirex in Herring Gull eggs - Annually Monitored Colonies, 2000



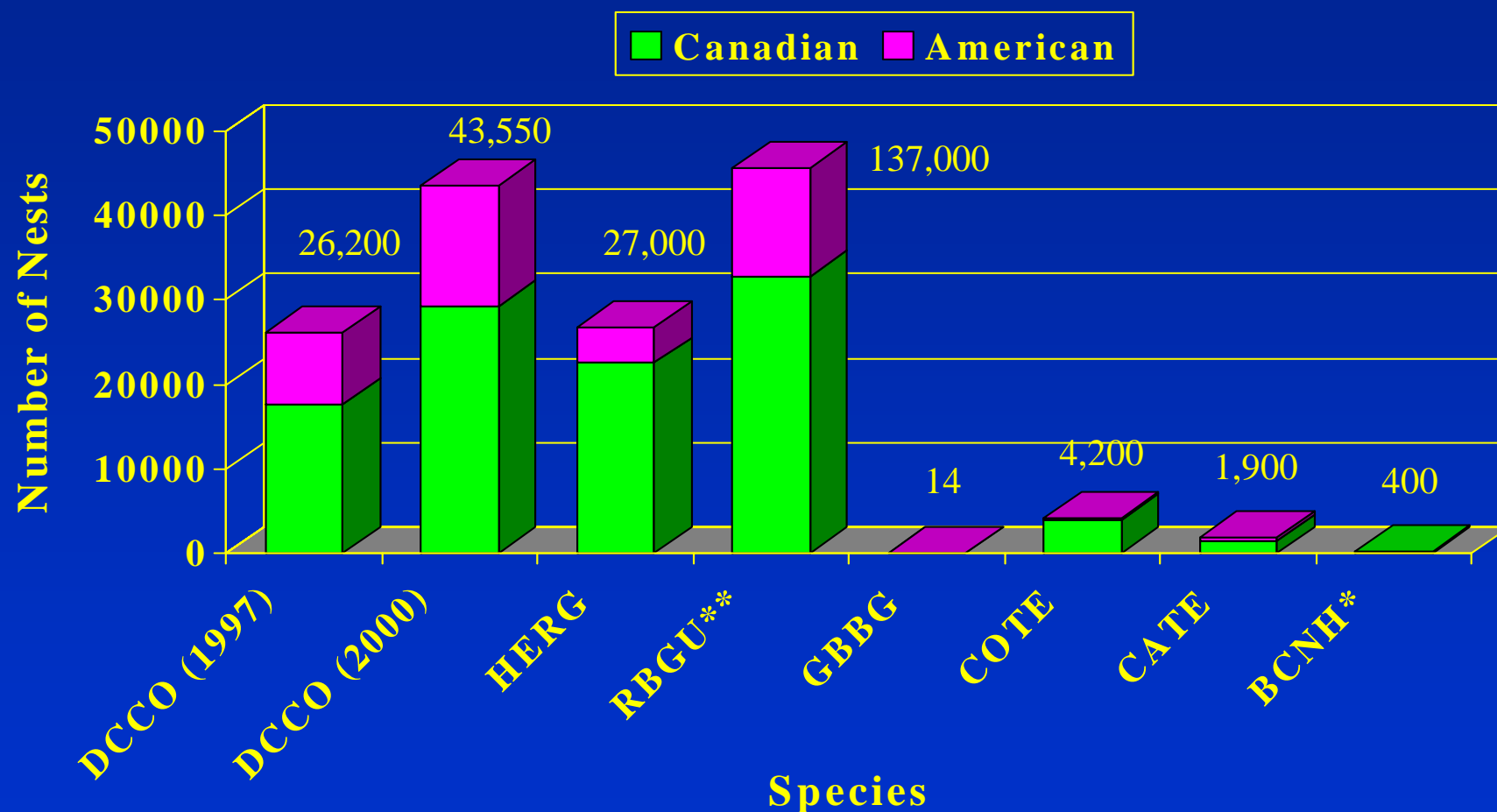
PCB 1:1 in Herring Gull eggs - Annually Monitored Colonies, 2000



2378-Dioxin in Herring Gull eggs - Annually Monitored Colonies, 2000



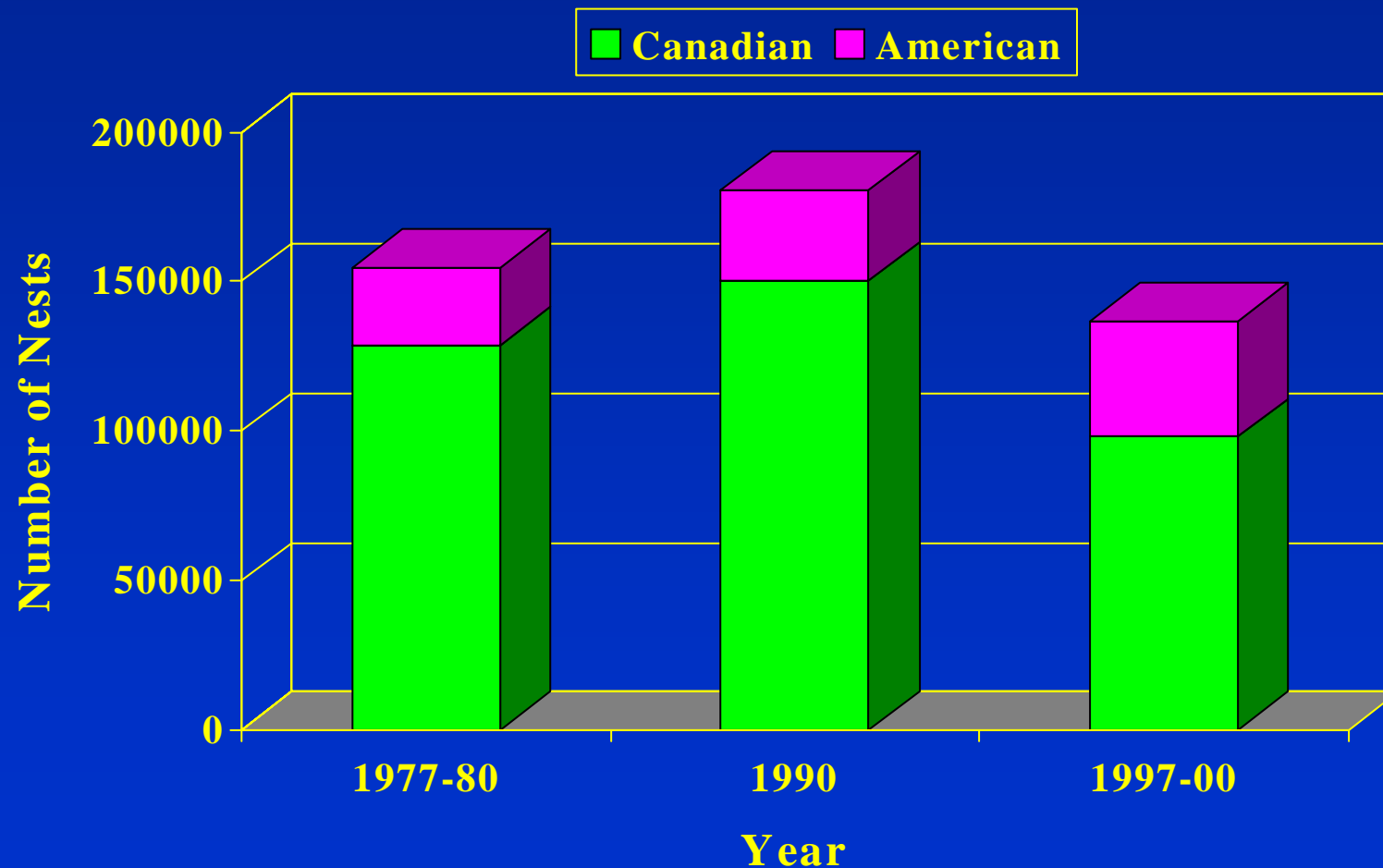
Number of nests of colonial waterbirds on Lake Huron, 1997-2000.



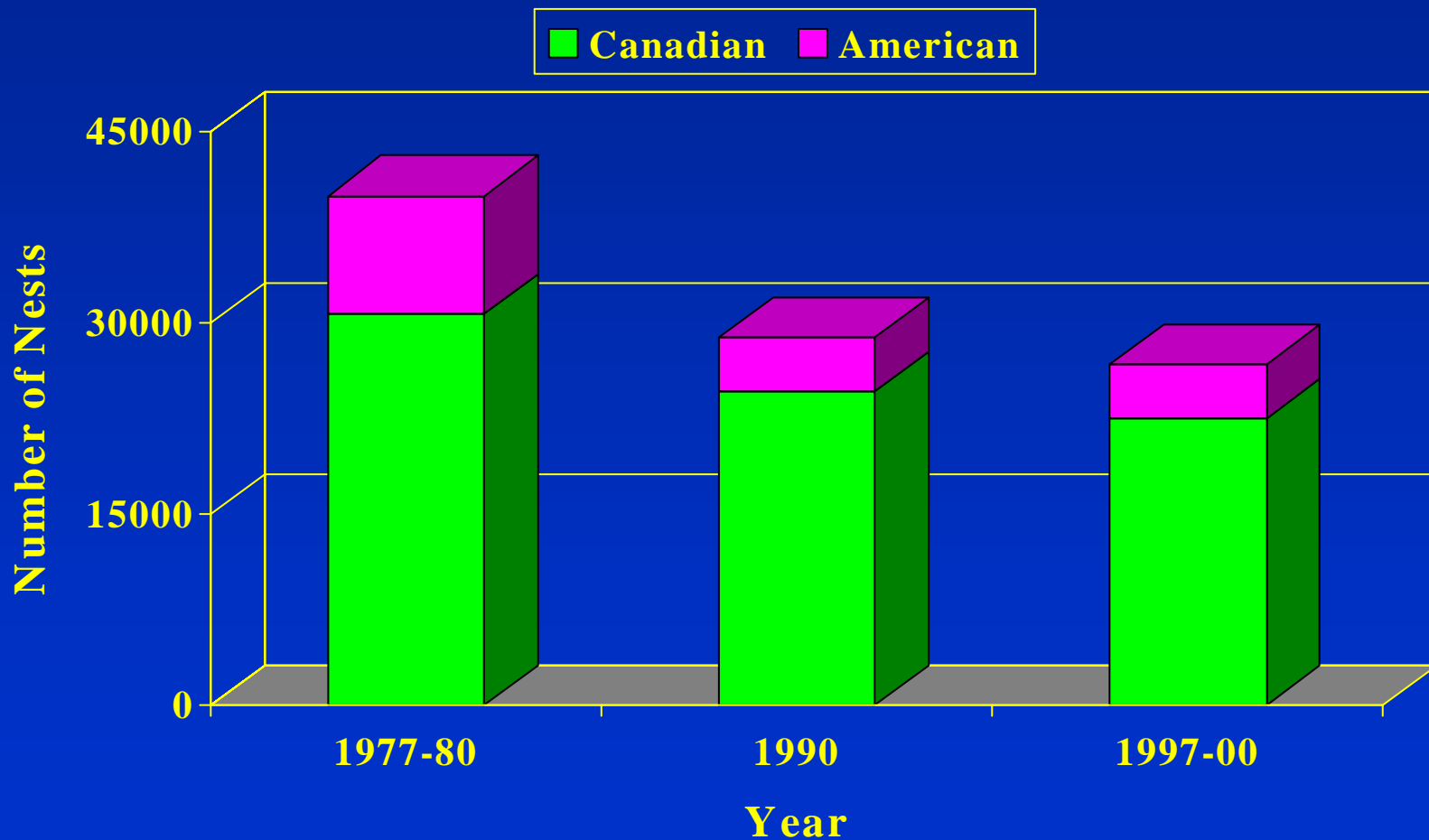
* no available American data

* **RBGU numbers have been divided by a factor of 3

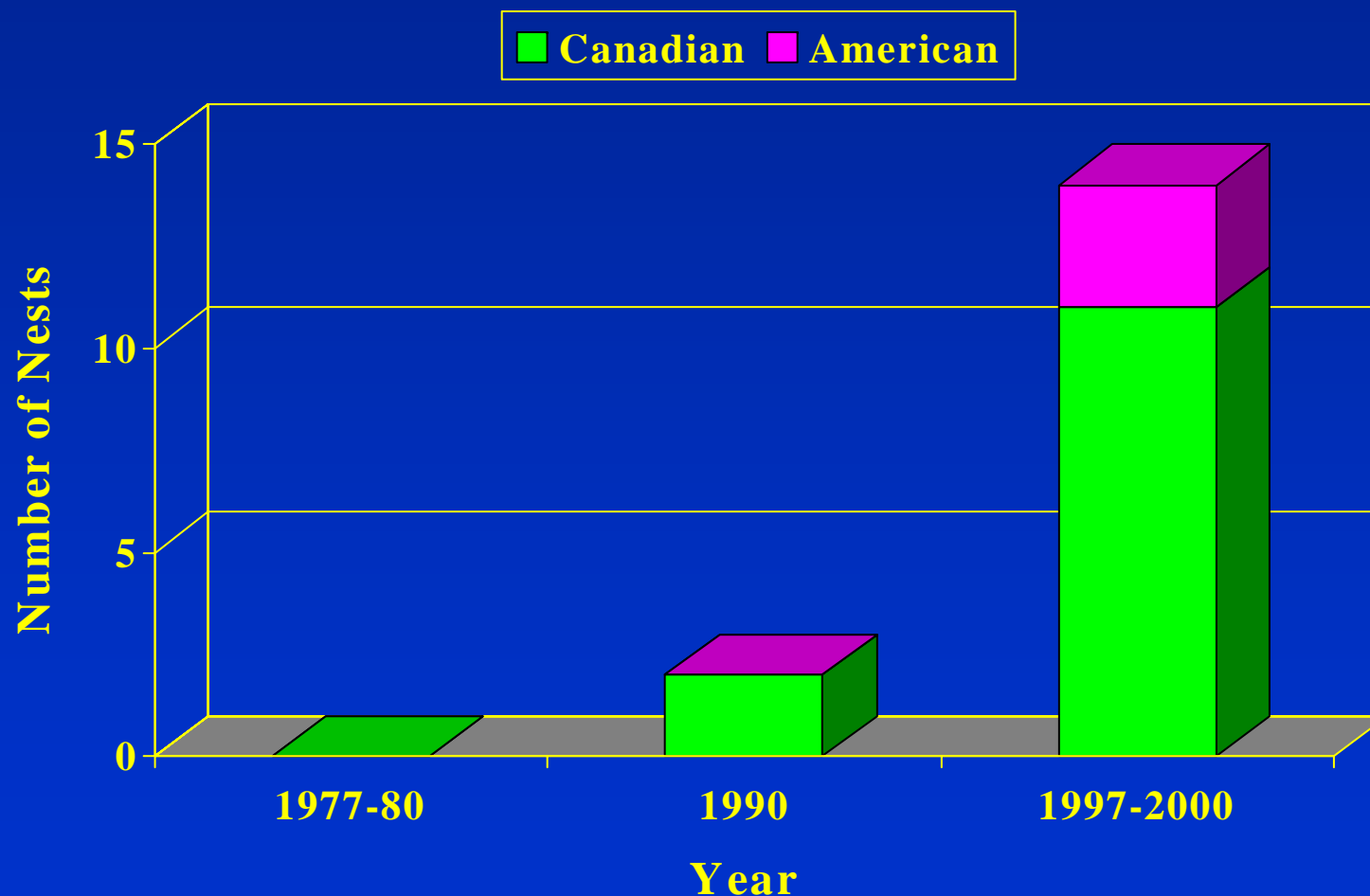
Number of Ring-billed Gull nests on Lake Huron, 1977-2000



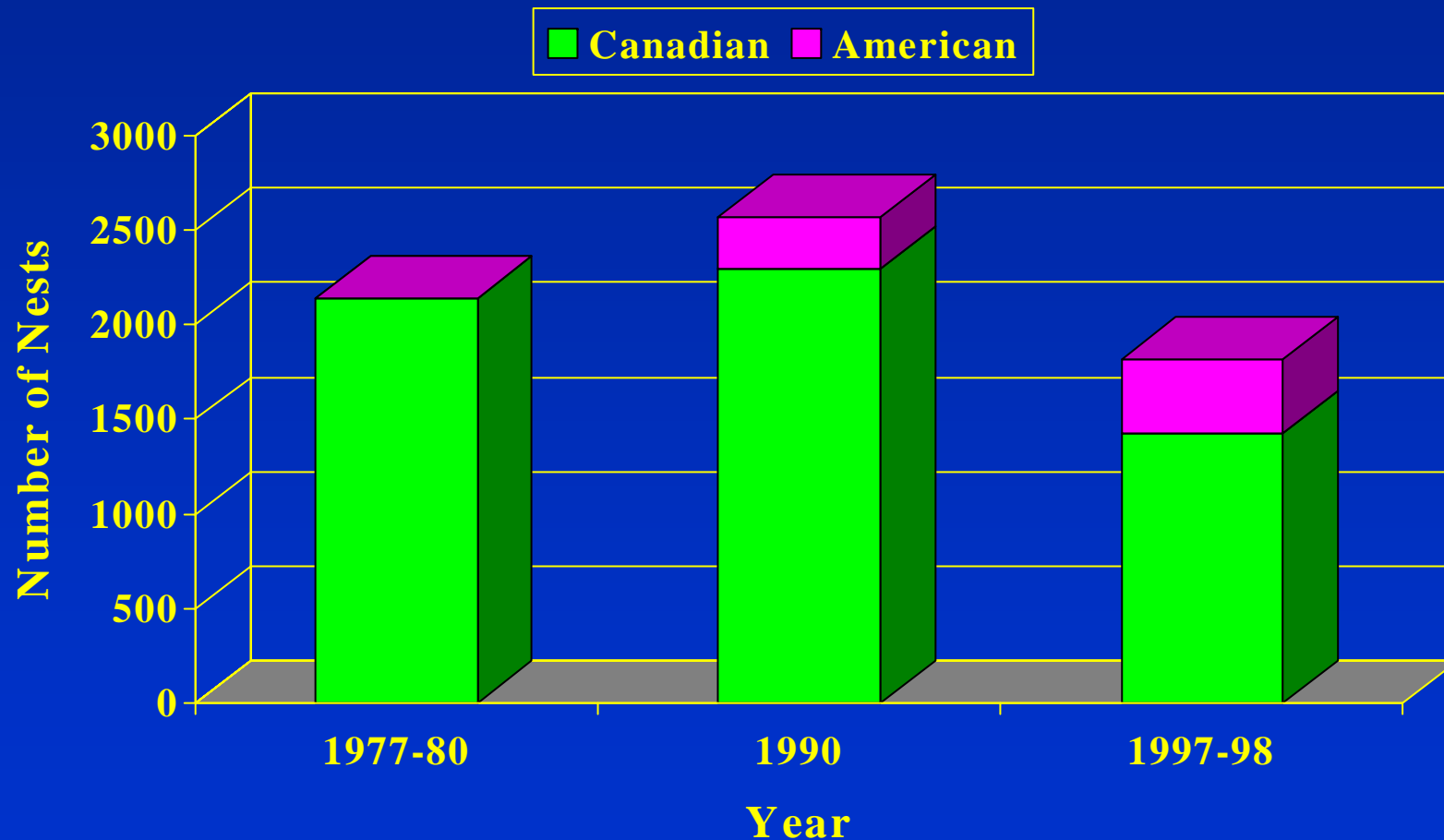
Number of Herring Gull nests on Lake Huron, 1977-2000



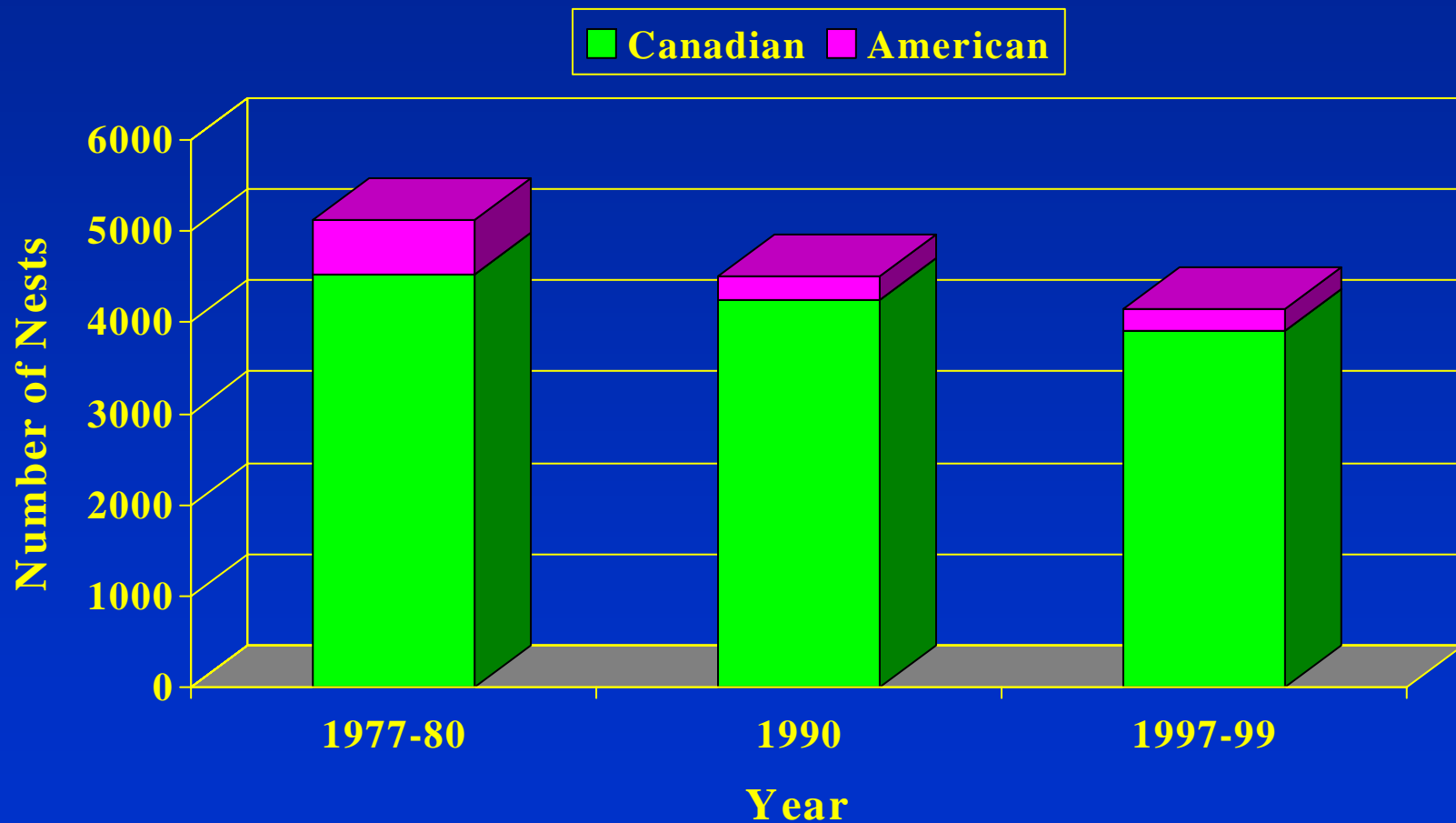
Number of Great Black-backed Gull nests on Lake Huron, 1977-2000



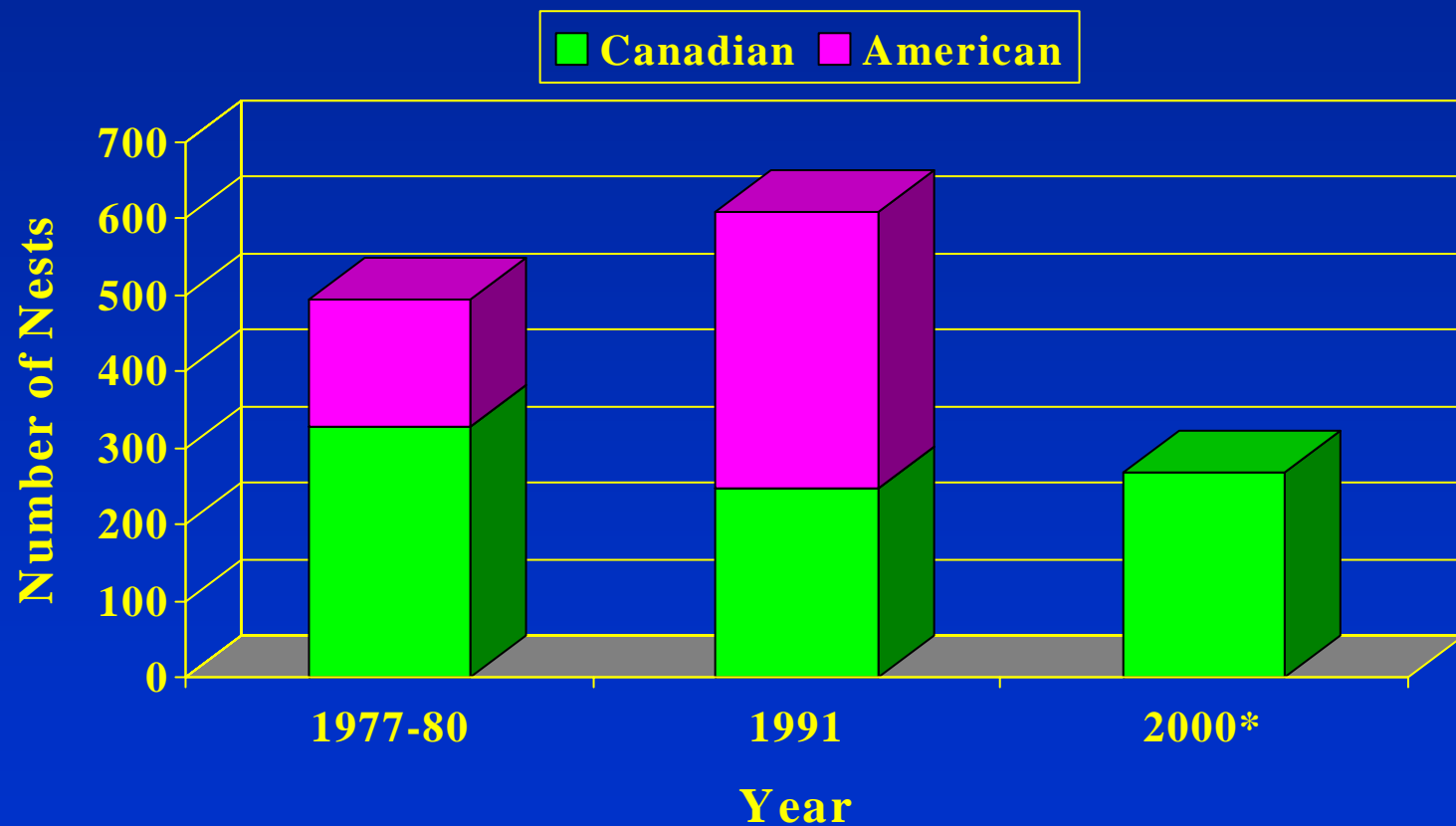
Number of Caspian Tern nests on Lake Huron, 1977-1998



Number of Common Tern nests on Lake Huron, 1977-1999

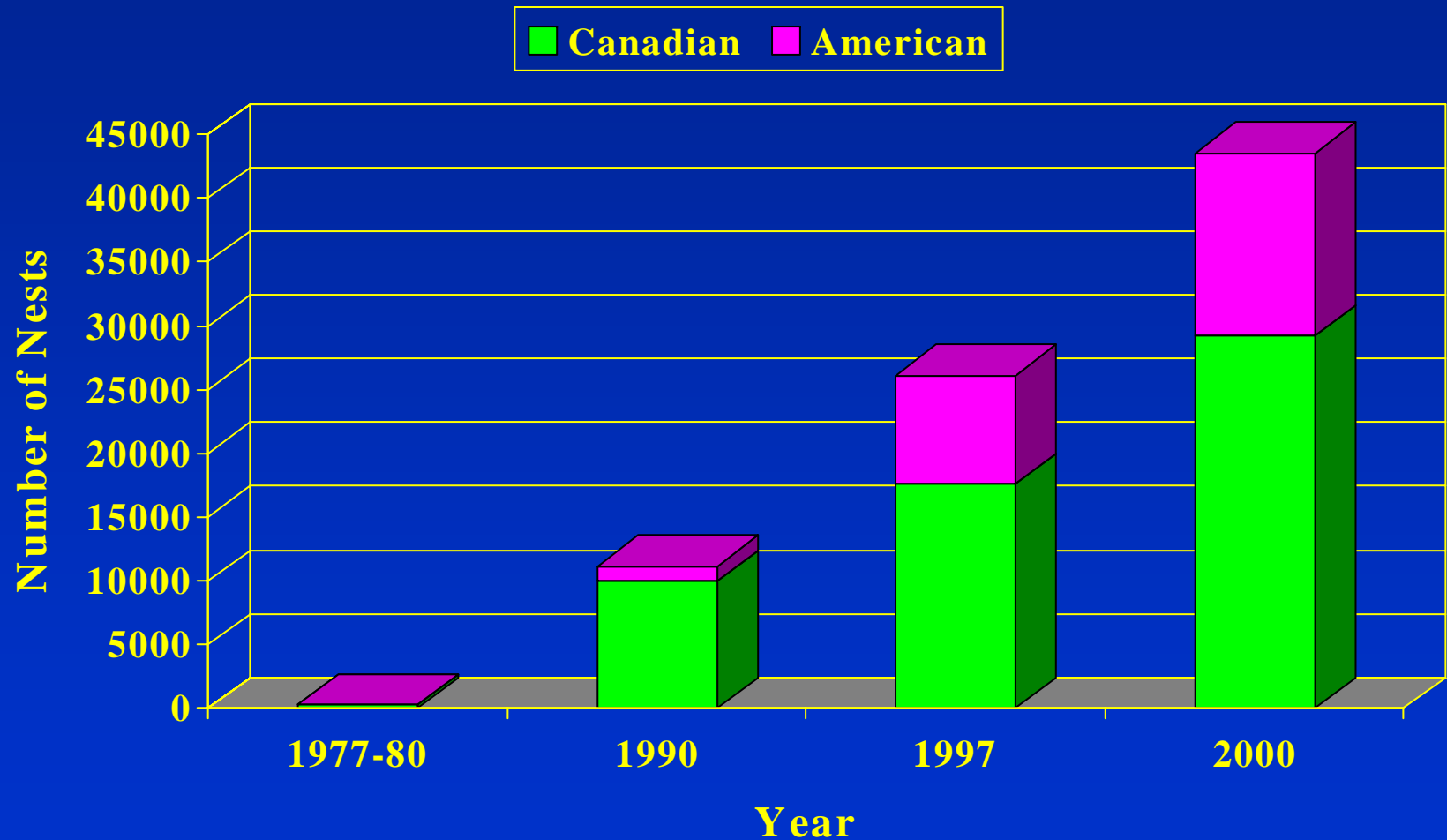


Number of Black-crowned Night-Heron nests on Lake Huron, 1977-2000



* no available American data

Number of Double-crested Cormorant nests on Lake Huron, 1977-2000



Take Home Message

For Herring Gull eggs:

- Eggs from Channel-Shelter I. (Saginaw Bay) had the highest or among the highest levels of PCBs, TCDD, HCB and DDE of all sites on the Great Lakes.
- 17 of 21 contaminant trends (81%) from 3 Annual Monitor Colonies in Lake Huron have declined since 1974-80; 62% of them at a constant rate; 19% have slowed in recent years.

For Colonial Waterbirds on Lake Huron:

- Over 400,000 colonial waterbirds breed on Lake Huron, mostly Ring-billed and Herring Gulls and cormorants.
- Approximately 73% of these occur in Canadian waters and 27% in U.S. waters.
- Trends over 23 years indicate cormorant and black-backed gulls are increasing steadily, Common Terns and Herring Gulls have declined steadily and night-herons and Ring-billed Gulls have fluctuated.